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EXAMINER HARPER, LEON JONATHAN				
ART UNIT		PAPER NUMBER		
2166				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Office Action Summary

Application No.

10/752,834

Applicant(s)

MARGOLUS ET AL.

Examiner

Leon J. Harper

Art Unit

2166

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 62, 64-67, 167, 168 and 170-186 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 62, 64-67, 167, 168 and 170-186 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The amendment filed 8/7/2008 has been entered. Claims 62, 173 have been amended. Claim 186 has been added. No claims have been cancelled. accordingly, claims 62, 64-67, 167-168, 170-186 are pending in this office action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 62,64-65, 164-165, 167-168, 170-185 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6971018 (hereinafter Witt) in view of US 20030220929 (hereinafter Tol) and in further view of US 6125371 (hereinafter Bo).

As for claim 62 Witt discloses: distributed data storage system (See column 3 lines 65-67); sharing among the plurality of storage sites, a set of rules that restrict deletion of the entity versions and , applying the shared set of rules independently at each of the plurality of storage sites, to determine whether or not the copies of the entity version can be deleted (See column 5 lines 35-40 and column 12 lines 61-65); wherein if it is determined that the copies of the entity version cannot be deleted then they also cannot be modified; wherein a client program communicating with the disk-based distributed data storage system only over the network deposits the entity version into the storage system (See column 12 lines 61-65, column 12 lines 60-65); and wherein a first request sent by the client program communicating with the disk-based distributed data storage system (See column 4 lines 18-23) causes the shared set of rules to restrict deletion of the entity version and wherein a second request sent by the client program after the first request would enable the entity version to be deleted in violation of the restriction and the request is denied wherein no request sent by the client program can enable deletion to occur in violation of the restriction (column 12 lines 61-65 note no changes to the file are made unless allowed). Wherein the sharing step comprises storing at each of the plurality of storage sites information derived from the setoff rules; wherein the independent application of the shared set of rules at each of the plurality of storage sites is designed to prevent alterations or corruptions of the program operation at a one of the plurality of storage sites from allowing entity version to be deleted or modified at another of the plurality of storage sites in violation of the restriction on the deletion of the entity version See column 4 lines 1-3 and column and

column 5 lines 36-40 note: rules are standard in a distributed where each computer has its own module rules are calculated locally. Wherein the plurality of storage sites communicate with one another in order to achieve fault tolerance against the loss of storage sites Wherein the shared set of rules restrict deletion based at least in part upon a time that was associated with the entity version by an act of the client program and wherein a third request sent by the client program after the second request causes the copies of the entity version to be deleted from the plurality of storage sites (See column 4 lines 1-3 and column and column 5 lines 36-40)

While Witt does not significantly differ from the claimed invention Witt does not explicitly disclose recording distinct states of stored data entities, corresponding to different moments of time, as a plurality of entity versions coexisting and storing copies of an entity version that is one of the plurality of entity versions at each of a plurality of storage sites of the distributed data storage system. Tol however does disclose recording distinct states of stored data entities, corresponding to different moments of time, as a plurality of entity versions coexisting (See paragraph 0025), and Bo discloses: recording distinct states of stored data entities, corresponding to different moments of time, as a plurality of entity versions coexisting (See abstract and column 5 lines 61-64 note: multi-versioned data). It would have been obvious to an artisan of ordinary skill in the pertinent art at the time the invention was made to have incorporated the teaching of Tol and Bo into the system of Witt. The modification would have been obvious because the three references are concerned with the solution to

problem of protecting and managing files given computers finite resources. Therefore, there is an implicit motivation to combine these references. In other words, the ordinarily skilled artisan during his/her quest for a solution to the cited problem, would look to the cited references at the time the invention was made. Consequently, the ordinarily skilled artisan, would have been motivated to combine the cited references since Tol's teaching would have enabled users to place expiration weights/priorities on the files as another rule as to when to delete files, and Bo's system would have enable users to add factor in time calculations into the expiration rule.

As for claim 64, the rejection of claim 62 is incorporated, and further Witt discloses: expiration times are assigned to the entity versions, independently within each of the plurality of storage sites, according to the shared set of rules, before which times both modification and deletion are prohibited (See column 4 lines 1-3 and column and column 5 lines 36-40 note: rules are standard in a distributed where each computer has it's own module rules are calculated locally).

As for claim 65, the rejection of claim 62 is incorporated, and further Tol discloses: no single individual is given the authority to override the deletion prohibition at all of the plurality of storage sites (See paragraph 0032 note this is the only way to change how it is deleted).

As for claim 164 the rejection of claim 62 is incorporated, and further Witt discloses: in which applying the set of rules at a one of the plurality of storage sites determines that the entity version can be deleted and a copy of the entity version is deleted immediately and storage space that was used to store the copy becomes available to store new data (See column 6 lines 20-25 note: when memory is reclaimed it is immediately available).

As for claim 165 the rejection of claim 62 is incorporated, and further Witt discloses in which applying the set of rules determines that the entity version can be deleted but the copies of the entity version are only deleted if deletion is requested by a client of the disk-based distributed data storage system (See column 4 lines 18-22 for disk based system that will be making request and column 12 lines 60-65).

As for claim 167 the rejection of claim 62 is incorporated, and further Bo discloses in which, during a time interval, the shared set of rules prohibits deletion of the entity version while others of the plurality of entity versions are allowed to be deleted (See column 6 lines 38-45) .

As for claim 168 the rejection of claim 167 is incorporated, and further It would have been obvious to an artisan of ordinary skill in the pertinent art to have incorporated in which the time interval is a year in length into the system of Witt,Bo, and Tol. The

modification would have been obvious because usually a year is the minimum time you want to keep a historical record. The reason one year is usually the minimum is because companies file taxes every year and should be prepared for audits, in fact almost every company, plus all state and federal governments operate on fiscal years and do not want fiscal or research and development information deleted for at least the year in which they would have to answer questions based on that information, many times records need to be kept for numerous years before they can be destroyed.

As for claim 170 the rejection of claim 167 is incorporated, and further Bo discloses in which the client program causes the time interval during which deletion is prohibited to be extended and no subsequent action taken by the client program can cause the time interval to be shortened (See column 5 lines 43-46).

As for claim 171 the rejection of claim 167 is incorporated, and further Tol discloses: in which the client program causes the length of the time interval to be set and no subsequent action taken by the client program can shorten the time interval (See paragraph 0033).

As for claim 172 the rejection of claim 171 is incorporated, and further Witt discloses: in which the length of the time interval is initially not set and, before the length

of the time interval is set, no action taken by the client program can cause the entity version to be deleted (See column 12 lines 60-65).

As for claim 173 the rejection of claim 167 is incorporated, and further Bo discloses: in which no action taken by any client program that only communicates with the disk-based distributed data storage system over the network can cause the time interval to be shortened (See column 5 lines 43-46)..

As for claim 174 the rejection of claim 62 is incorporated, and further Bo discloses: in which the plurality of entity versions record historical states of a single stored data entity, with each of the plurality of entity versions associated with a historical time interval during which the recorded historical state was the state of the single stored data entity (See column 6 lines 38-45).

As for claim 175 the rejection of claim 174 is incorporated, and further Bo discloses: in which the shared set of rules that determine whether or not the entity version can be deleted depend at least in part on the length of the historical time interval associated with the entity version (See column 6 lines 38-45)..

As for claim 176 the rejection of claim 174 is incorporated, and further Bo discloses: in which the shared set of rules that determine whether or not the entity version can be deleted depend at least in part on whether or not the historical time

interval associated with the entity version includes a specified moment of time (See column 6 lines 38-45)...

As for claim 177 the rejection of claim 62 is incorporated, and further Witt discloses: in which a stored data entity is a file in a file system or a record in a database or an object in an object storage system (See column 5 lines 32-37).

As for claim 178 the rejection of claim 62 is incorporated, and further Witt discloses: in which two of the plurality of storage sites are at least a mile apart (See column 5 lines 5-7 note: definition of wide area network)

As for claim 179 the rejection of claim 62 is incorporated, and further Bo discloses: in which the set of rules comprise a program that is separate and distinct from the software that implements the disk-based distributed data storage system and sharing occurs at the time when the plurality of entity versions are being stored in the storage system (See column 5 lines 12-19).

As for claim 180 the rejection of claim 62 is incorporated and further Wilt discloses: in which the entity version is a version of a stored data entity and the first request causes a new version of the stored data entity to be stored (See figure 9).

As for claim 181 the rejection of claim 62 is incorporated and further Wilt discloses: in which the first request assigns an expiration time to the entity version, before which time deletion is prohibited (See column 5 lines 35-40).

As for claim 182 the rejection of claim 62 is incorporated and further Wilt discloses: in which the second or third request attempts to delete the entity version or to change the time associated with the entity version (See column 6 lines 5-15).

As for claim 183 the rejection of claim 62 is incorporated and further Wilt discloses: in which the entity version is a version of a stored data entity and the third request causes a new version of the stored data entity to be stored (See column 5 lines 50- column 6 line 7).

As for claim 184 the rejection of claim 62 is incorporated and further Wilt discloses: in which the time associated with the entity version is a time when the entity version was created, transmitted or stored; or had some property changed; or a time assigned to the entity version (See column 6 lines 5-15)

As for claim 185 the rejection of claim 62 is incorporated and further Wilt discloses: in which the shared set of rules are communicated to the plurality of storage sites at the time that the client program communicating with the disk- based distributed

data storage system deposits the entity version into the storage system (See column 1 lines 30-40).

As for claim 186 the rejection of claim 186 is incorporated and further Tol discloses: in which care is taken to ensure that operators and administrators of the disk-based distributed data storage system have no special privileges or physical access that would allow them to circumvent or change the shared set of rules at all of the plurality of storage sites (See paragraph 0026 note: the preservation values can be set by default).

Response to Arguments

Applicant's arguments filed 8/7/2008 have been fully considered but they are not persuasive.

Applicant argues:

The examiner argues that Witt implies the first of these elements when a user installs an operating system and then uses the Witt mechanism, saying "There are certain files that even though the user installed them with the os the user will nonetheless be unable to override the protection of the files (See Witt column 2 5 -10). In most cases this is a desired outcome since modification to some system files will result in loss of performance by the system (See Witt column 1 lines 40-50)." We maintain that this very example shows that the Witt mechanism does not provide the required protection. In particular the clause of claim 62 that recites "wherein no request sent by the client program can enable deletion to occur in violation of the restriction caused by the first request" is not satisfied. For clearly, if the client can reinstall the operating system, this involves deleting all operating system files, in violation of the restriction. In fact, Witt explicitly states (column 8, lines 53 through 57) that "it is possible for a user to override the file protection service", in explaining why a scan utility is necessary.

Examiner responds:

Examiner is not persuaded. Examiner is entitled to give claim limitations their broadest reasonable interpretation in light of the specification. Interpretation of Claims- Broadest Reasonable Interpretation: During patent examination, the pending claims must be 'given the broadest reasonable interpretation consistent with the specification.' Applicant always has the opportunity to amend the claims during prosecution and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 162 USPQ 541,550-51 (CCPA 1969). In this case the claim states that wherein no request sent by the client program can **enable deletion to occur in violation of the restriction caused by the first request.**" Accordingly, the claims does not require focus on what particular item is deleted but the issue is whether or not that deletion that occurred was in fact in violation of the restriction.

Applicant argues:

Witt also fails to disclose a mechanism for providing the level of protection contemplated here, which involves using a "distributed data storage system", "sharing, among the plurality of storage sites a set of rules that restrict deletion of the entity version", "wherein the independent application of the shared set of rules at each of the plurality of storage sites is designed to prevent alterations or corruptions of the operation at a one of the plurality of storage sites from allowing the entity version to be deleted or modified at another of the plurality of storage sites in violation of the restriction on the deletion of the entity version" and "wherein the plurality of storage

sites communicate with one another over the network in order to achieve fault tolerance against the loss of storage sites". Notice that the storage sites communicate to maintain fault tolerance, but nevertheless independently enforce the shared rules. There is no such mechanism disclosed in Witt or the other cited art.

Examiner responds:

Examiner is not persuaded. Examiner is entitled to give claim limitations their broadest reasonable interpretation in light of the specification. Interpretation of Claims- Broadest Reasonable Interpretation: During patent examination, the pending claims must be 'given the broadest reasonable interpretation consistent with the specification.' Applicant always has the opportunity to amend the claims during prosecution and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 162 USPQ 541,550-51 (CCPA 1969). Witt discloses that the system is also designed and in may be practiced in distributing computing environments where task remotely. It would be impossible for task to be performed correctly, and remotely in a distributed computing environment without sharing of the restriction rules.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leon J. Harper whose telephone number is 571-272-0759. The examiner can normally be reached on 7:30AM - 4:00Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain T. Alam can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LJH
Leon J. Harper
November 4, 2008

/Hosain T Alam/

Supervisory Patent Examiner, Art Unit 2166